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ABSTRACTS *from current literature*

MEDICINE

Prevention of Thromboembolic Complications in Myocardial Infarction by Anticoagulant Therapy.

H. I. GLUECK, H. W. RYDER AND P. WASSERMAN: *Circulation*, 13: 884, 1956.

Autopsy records of 151 patients dying of myocardial infarction in a large private hospital were reviewed. Seventy-six patients received anticoagulant therapy and 75 patients did not. Embolic phenomena were common in patients dying with myocardial infarction. Clinically, these were often overlooked. The utilization of anticoagulant drugs reduced strikingly the incidence of embolic complications from 41% in the "untreated" series to 9% in the "adequately treated" group. Emboli responsible for death, as judged by the pathologist, were reduced from 21% in the "untreated" group to 4% in patients receiving adequate therapy. Inadequate, delayed or poorly planned therapy afforded the patients no protection from this complication. Thrombophlebitis was markedly diminished in "treated" patients, and fewer mural thrombi were found in patients who received adequate therapy. Extension of the infarct or a new infarct was uninfluenced by anticoagulant drugs.

Hæmorrhage in the present series was not a significant cause of death. Rupture of the ventricle was noted in both groups regardless of therapy.

The patients could not be rigidly classified on admission to hospital in regard to their eventual prognosis. This observation, plus the difficulty of diagnosis and the unpredictability of the disease, confirmed the inference that the decision to use anticoagulant therapy should not depend upon rigid diagnostic criteria for infarction. The benefit from these drugs during the acute phase of illness can be ascribed to prevention of thromboembolic complications. The indication for their use is a clinical condition in which thromboembolism is a real hazard; in this role they are a useful adjunct in the treatment of myocardial infarction. S. J. SHANE

Perforation of the Interventricular Septum Following Acute Myocardial Infarction.

E. SAHAGUN AND R. O. BURNS: *Ann. Int. Med.*, 44: 657, 1956.

The clinical picture of rupture of the interventricular septum following acute myocardial infarction is quite dramatic and the diagnosis is relatively simple. During the course of treatment for a coronary occlusion there suddenly appears a loud, harsh systolic murmur with or without an accompanying thrill. The main problem in differential diagnosis is rupture of a papillary muscle. However, in the latter, the murmur is more bizarre, usually diastolic, and best heard over the apex; a thrill is usually absent; and acute left ventricular failure develops more frequently. The time interval between the myocardial infarction and the development of the perforation has been reported from a minimum of four hours to a maximum of one month. Survival time after septal ruptures has been as long as four to five years. The majority of patients, however, survive less than one week. The writers report four cases of this protean complication, all diagnosed ante mortem. All their patients had, in addition to the new murmur, recurrence of pain, dyspnœa and cyanosis. Two patients developed irreversible shock, and the other two went into progressive congestive heart failure which could not be reversed by digitalization and the use of mercurial diuretics. One patient had the interesting combination of marked neck vein distension and peripheral venous collapse.

No characteristic electrocardiographic changes were found which would have been helpful in substantiating the clinical diagnosis of septal rupture. S. J. SHANE

A Study of Tuberculous Round Foci.

J. M. BLACK AND G. POOLE: *Am. Rev. Tuberc.*, 73: 805, 1956.

In this study, 124 patients with a total of 177 round tuberculous foci were studied. Ninety-eight of these were patients with a single round focus. In 31 cases of single round foci (31.6%) the foci were derived from tuberculous pulmonary infiltrations, and only in 8 cases from blocked cavities. In 84 cases (67.7%), the round foci were present initially.

Contrary to established American and Canadian opinion, the writers believe that solitary round foci of 1 cm. or less in diameter should be observed only, and receive no antimicrobial therapy unless there is adjacent disease. They believe that cases of round foci larger than 1 cm. should be given antimicrobial therapy.

Again, contrary to Canadian and American opinion, these writers believe that surgery is only occasionally required and that the prognosis in round foci with chemotherapy alone is good. S. J. SHANE

Progressive Pulmonary Histoplasmosis with Bilateral Resection and Chemotherapy.

C. R. HOWSON *et al.*: *Ann. Int. Med.*, 44: 985, 1956.

A case is reported of progressive pulmonary histoplasmosis closely resembling reinfection-type cavitary tuberculosis, and acute pneumonic spread and cavity formation in the contralateral lung. Surgical excision of the more recently infected tissue was followed by some dissemination of the process to both lungs, but later excision of the involved tissue in the lung first infected was uncomplicated, and the patient was later apparently free of active disease.

A short course of antituberculosis medication, given before the diagnosis was established, may have exerted a deleterious effect on the lesions. This had been noted by previous authors.

During part of the course of the illness, the patient was treated daily with MRD-112, an experimental chemotherapeutic agent. This treatment was carried out for a period of 90 days and, although the results were not conclusive, the authors felt that it probably had a beneficial effect on the lesions, as evidenced by the rapid improvement in the disseminated lesions resulting from the first operation, a slight diminution in the size of the cavity in one apex before a second operation, and an increased difficulty in culturing the organisms in the pulmonary tissue removed at the second operation. Whenever possible, histoplasmosis should be treated by combined chemotherapy and surgery. S. J. SHANE

Thoracic-Outlet Syndrome: Evaluation of a Therapeutic Exercise Program.

R. M. PEET *et al.*: *Proc. Staff Meet., Mayo Clin.*, 31: 281, 1956.

For a long time it has been known that patients may have cervical ribs; it has also been known that cervical ribs are frequently asymptomatic. On the other hand, pain, paræsthesias, muscular atrophy and weakness, and a variety of vascular and vasomotor symptoms might be attributed to the cervical rib. Furthermore, removal of the rib relieved the patient, provided the complications of this formidable surgical procedure did not result in the patient's being worse off. Fortunately, the treatment of the cervical-rib syndrome has been greatly simplified by Adson's operation in which no attempt was made to remove the cervical rib itself. He simply sectioned the anterior scalene muscle which compressed the brachial plexus and subclavian artery anteriorly, and removed the tendinous band and sometimes the tip of the cervical rib, which compressed the abovementioned structures posteriorly. Thus, the plexus and artery were decompressed and the patient was relieved of the compression symptoms.

It was only natural that section of the anterior scalene muscle should be tried in an attempt to relieve symptoms

identical with those of the cervical-rib syndrome in patients who had no cervical ribs, and anterior scalenotomy became a frequently performed operation and "scalenus anticus syndrome" a relatively common diagnosis. There can be no doubt that the operation worked at times and yet it failed in many cases. Thus, one was forced to conclude that there was something wrong with the selection of patients for surgical treatment.

Many of the failures were in tired, harassed, drooping, middle-aged women. They were women who had drooping shoulders, drooping expressions and drooping spirits, and often low basal metabolic rates and occasionally low values for hæmoglobin. They were women who were generally sagging in their middle years. It was felt that if they could have had more rest, more recreational exercise and more appreciative families they would have been more perky in general and would have avoided the symptoms of the thoracic-outlet syndrome. Certain courses of exercises have eliminated at least the drooping shoulders and poor posture, and the ministrations of the physiatrist have given good results.

In the selection of patients for scalene section it seems well to avoid the drooping middle-aged woman unless there are definite objective evidences of brachial and subclavian compression not relieved by a thorough trial of exercises to strengthen the elevators of the shoulders and to improve posture. S. J. SHANE

Diagnostic and Prognostic Significance of Eosinopenia in Acute Myocardial Infarction.

K. KIRKEBY: *Am. J. M. Sc.*, 232: 50, 1956.

Eosinophil counts were performed in 149 patients in the early phase of acute myocardial infarction and in 306 patients suffering from diseases usually considered in the differential diagnosis of this condition. An early eosinopenia was found in the great majority of patients with myocardial infarction. Of the counts made on the first, second and third days only 3, 6 and 15% respectively were above 50 per c.mm. It is concluded that the finding of a normal eosinophil count in the period from 5 to 48 hours after an attack suspected to be acute myocardial infarction strongly contradicts the diagnosis.

An early eosinopenia was found very often in pneumonia, pulmonary embolism, cardiac arrhythmias, acute congestive failure and gallbladder disease, while uncomplicated angina pectoris usually did not reveal significant eosinopenia. Thus the eosinopenia is of no value in the differential diagnosis of myocardial infarction as regards diseases involving severe stress, but may be of some aid as regards uncomplicated angina pectoris.

Of 81 patients with eosinopenia of less than 7 days' duration, only two patients died. Of 23 patients with prolonged eosinopenia 16 died. Thus prolonged eosinopenia denotes a poor prognosis. S. J. SHANE

Relationship of Tuberculin Sensitivity and Adrenocortical Function in Humans.

J. J. LANE, E. R. CLARKE AND T. H. HOLMES: *Am. Rev. Tuberc.*, 73: 795, 1956.

Recent studies have demonstrated that the reaction to tuberculin in humans and animals is significantly altered by the administration of corticotrophin or cortisone or both. These observations suggest that the hypersensitivity reaction may be influenced by endogenous adrenocortical hormones. The purpose of this study was to investigate for the first time in the human organism the relationship of adrenocortical function, as measured by urinary 17-ketosteroid excretion, to tuberculin sensitivity. The results may be stated briefly as follows:

There was a significant difference between 17-ketosteroid excretion in negative reactors and positive reactors. The average negative reactor had a 17-ketosteroid excretion of 16.3 mg. per 24 hours, and the average positive reactor had an excretion of 8.5 mg. per 24 hours. All patients who had 17-ketosteroid excretions of 15 mg. or more per 24 hours were negative reactors, with one exception.

In negative reactors, the range of 17-ketosteroid determinations was from 4.5 to 25.5 mg. per 24 hours; in 73% values were above 14.0 mg. per 24 hours. In those with positive reactions, the relationship between the magnitude of the positive reaction and the 17-ketosteroid excretion was not significant.

From these findings, it is concluded that endogenous adrenal hormones may influence the phenomenon of hypersensitivity in tuberculosis, and that adrenocortical hyperfunction tends to be associated with a negative skin reaction to purified protein derivative (PPD). It was also concluded that, by inducing alterations in adrenocortical function, emotional reactions might play a role in resistance in tuberculosis by modifying the body's reaction to bacterial invasion. Although no inferences concerning resistance should be drawn from this study, the relationship of tuberculin hypersensitivity and the urinary concentration of 17-ketosteroids demonstrated here does suggest additional evidence of a mechanism whereby emotional reactions might influence the interaction of the host and organism. S. J. SHANE

SURGERY

Complications of the Surgical Treatment of Chronic Ulcerative Colitis.

B. P. COLCOCK AND W. L. MATHIESEN: *A.M.A. Arch. Surg.*, 72: 399, 1956.

The records of 307 patients who were submitted to ileostomy and colectomy between 1946 and 1954 at the Lahey Clinic were reviewed. Complications were common, but the incidence of some of them greatly lessened.

Skin irritation in 15.9% occurred usually after leaving hospital, but was less with the early use of the modern ileostomy bag and more care in placing the ileostomy. Postoperative electrolyte imbalance (12%) also occurred, often after leaving hospital; it depends on the care with which patients ensure that they get enough fluid and salt. Intestinal obstruction followed ileostomy in 43.6% of cases and half of these were relieved by non-surgical means. Fistulas in the side of the ileostomy (22%) were often due to necrosis from a too closely fitting bag. Prolapse, retraction and hernia are prevented by fixation of the ileal mesentery to the parietal peritoneum (not by sutures in the bowel wall). Persistent bleeding is often not controlled by ileostomy alone, and colectomy is now usually done at the same time as the small bowel fistula.

Regional ileitis is a serious complication in patients with ulcerative colitis and it is not known whether the two diseases are distinct entities, for they frequently coexist clinically. Ten patients in this group had to have further surgical intervention for regional ileitis after colectomy.

Pregnancy occurred in 10 patients after ileostomy but 5 of them still had all or part of their colon and these were the patients who suffered exacerbations of their colitis, abortions or eclampsia. Pregnancy is not advised till after colectomy.

Carcinoma developed in 3.57%. The incidence is greatly increased after 8 to 10 years of colitis and such patients show increased indication for total colectomy.

Right hemicolectomy or other local resection for apparently localized ulcerative colitis showed a very high incidence of recurrence. Stab-wound ileostomies are no better than ileostomies through wound incisions.

BURNS PLEWES

Transfusion Reactions.

M. GROVE-RASMUSSEN: *Bull. Soc. internat. chir. Brux.*, 15: 334, 1956.

Besides the ABO system and the Rh system, seven additional blood group systems are known but the latter are of minor clinical importance, for the antibodies are rare and often do not produce hæmolytic reactions. In a study of 20,000 random blood samples from patients in the Massachusetts General Hospital one out of 200

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was sensitized to the Rh factors and one out of 700 sensitized to the Kell factor.

The increasing volume of work done by the blood bank tends to increase clerical errors so that it is important that an experienced person, preferably a doctor, watches the first five minutes of each transfusion for the signs of a hæmolytic reaction: burning in the vein, precordial pain, flushing, tachycardia, hypotension, lumbar pain and vomiting. Hæmaturia, oliguria and jaundice are later signs. Pyrogenic reactions are frequent in patients with certain diseases, but are also due to incomplete cleansing of the transfusion apparatus. Aspirin is recommended for the former.

In spite of the efficacy of the many precautions recommended, reactions—even fatal reactions—still occur. Therefore the indications for transfusion should always be thoroughly considered and weighed against the risk of this form of therapy. BURNS PLEWES

The Problem of Resection Surgery for Pulmonary Tuberculosis in the Noninfectious Patient with Persisting Cavitary Disease.

J. W. BELL: *Am. Rev. Tuberc.*, 74: 169, 1956.

Sputum "conversion" by an initial or re-treatment course of chemotherapy does not necessarily guarantee sufficient drug control of tuberculosis of the lung for the purpose of pulmonary resection.

Various degrees of drug resistance to one or more drugs developed before reversal of infectiousness in 17.5% of the patients receiving chemotherapy for the first time. Drug resistance was twice as frequent (41%) in the re-treatment group. Those patients with partially resistant tubercle bacilli before reversal of infectiousness will show equivalent or greater resistance in the bacilli recovered from resected tissues.

In one-third of the patients who showed some degree of bacillary resistance in the last obtainable culture of the sputum, tubercle bacilli were cultured from the resected specimen.

The "noninfectious-cavitary" group is not uniform from the surgical standpoint. Among the one-third of the group whose strains of tubercle bacilli showed some drug resistance before reversal of infectiousness, there is a dangerous 10% who actually have open cavities with drug-resistant tubercle bacilli when operated upon. In this 10% with uncertain drug control, limited excisions (such as segmental or wedge resections), in the experience of the writers, have resulted in prompt tuberculous reactivation in the operative site.

While a variety of resections have been safely carried out in 90% of the "noninfectious-cavitary" group, in this dangerous or unpredictable 10% primary lobectomy should be performed. This policy of tailoring the surgery to fit the anticipated bacteriological findings in the lesions has proved most satisfactory. S. J. SHANE

PÆDIATRICS

Children with Hernias, Testes and Female External Genitalia.

M. R. GASPAR, J. H. KIMBER AND K. A. BERKAW: *A.M.A. Am. J. Dis. Child.*, 91: 542, 1956.

Three cases are reported of children with apparently normal female external genitalia who had inguinal herniæ. All three had bilateral inguinal testes; and absent uteri, tubes and ovaries, with small vaginæ. There was some enlargement and wrinkling of the labia in two. All had a female bodily habitus and the authors quoted evidence that secondary sexual and psycho-sexual development would be feminine.

It is pointed out that only 10% of children with inguinal herniæ are female. In such children therefore the external genitalia should be examined closely and a digital rectal examination performed to attempt to identify an infantile uterus or prostate. The gonad should not be removed at operation for herniotomy, though a bilateral biopsy should be taken if there is any doubt that the gonads are not ovaries. If the patient's sex is still in doubt, laparotomy is advised forthwith for investigation of the internal genitalia.

It was felt advisable to allow the patients to continue to be reared as girls. PAUL R. SWYER

RADIOLOGY

Comparative Evaluation of Radioactive Colloidal Gold and Nitrogen Mustard in the Treatment of Serous Effusions of Neoplastic Origin.

F. J. BONTE, J. P. STORAASLI AND A. S. WEISBERGER: *Radiology*, 67: 63, 1956.

Radioactive colloidal gold therapy has met with widespread acceptance in the treatment of carcinomatous effusions in serous cavities. While undoubtedly effective it is expensive, it is available only in certain treatment centres and its use is dangerous to nursing personnel. For these reasons the authors employed nitrogen mustard instead of radioactive gold, the nitrogen mustard being injected into serous cavities which were the site of carcinomatous effusions, by the same technique employed in the injection of radioactive gold.

A group of 60 patients were treated with radioactive gold, another 40 were treated by the intracavitary injection of nitrogen mustard, and both types of therapy were employed in a small series of 18 patients. Results were equally effective with gold or nitrogen mustard. No evidence was obtained that combined therapy with both agents possessed any added advantage, although if good results are not obtained with one in an individual case the other may subsequently prove to be effective.
NORMAN S. SKINNER

Bronchography with New Contrast Media.

S. E. DOMM *et al.*: *Am. Rev. Tuberc.*, 74: 188, 1956.

The armamentarium of the bronchographer has been increased by the addition of new contrast media to the basic iodized oil preparation. He can now select the medium best suited to the diagnostic problem, the local situation, and his own experience.

Iodized oil thickened with sulfanilamide is proving a valuable agent in experienced hands. It markedly reduces but does not altogether eliminate the complication of objectionable alveolar retention.

The present writers are not aware of an aqueous contrast medium that meets the requirements regarding safety, anæsthesiological simplicity, and fluoroscopic control.

The use of Dionosil Oily eliminates the chief defects of iodized oil preparations, i.e., occasional alveolar filling and retention. It has been found safe and satisfactory by any technique. Indications for the use of rapidly eliminated media include cases in children, preoperative cases, pulmonary tuberculosis, cases to be diagnosed roentgenographically, medico-legal cases, emphysema, and iodine sensitivity cases. Disadvantages of Dionosil Oily include its greater cost and slower flow.

Iodized oil, particularly Iodochlorol, remains a very good agent. With good transnasal technique and subsequent postural drainage, alveolar filling and retention are uncommon. Iodized oil, unthickened, is also useful for mapping segments which are difficult to fill.

Anæsthesia remains a problem in bronchography. Cocaine is satisfactory but inconvenient. Tetracaine hydrochloride is toxic in ordinary concentrations but is safer in concentrations of 0.25 or 0.50%, although action is correspondingly slower and briefer. The use of a tracheal tube requires deeper anæsthesia than the transnasal route. Hexylcaine hydrochloride is currently under clinical investigation and shows considerable promise. Careful selection of cases, use of "subposological" quantities of topical anæsthetic agent, and the use of barbiturates and antihistaminics reduce but do not eliminate the hazard of reaction to anæsthetic agent or opaque medium. S. J. SHANE